

CORRESPONDENCE

A new species representing a new record genus *Neoatractides* from China (Acari: Hydrachnidia: Torrenticolidae)

Xinyao Gu, Ping Zhang, Daochao Jin, Jianjun Guo*

Institute of Entomology, Guizhou University, The Provincial Key Laboratory for Plant Pest Management of Mountainous Region, Guiyang 550025, P. R. China

*Corresponding author, E-mail: jjguo@gzu.edu.cn

Abstract A new species, *Neoatractides* (*Heteratractides*) *proclusterosetus* **sp. nov.**, is described and illustrated in detail, which represents a new recorded genus *Neoatractides* Lundblad, 1941 and subgenus *Heteratractides* Lundblad, 1941 from China. The diagnosis of the subgenus *Heteratractides* is provided. The new species can be distinguished from other species by the dorsal shield consisting of two pairs of small dorsal platelets and a large dorsal plate. A key to the known species worldwide of the subgenus is provided. The type specimen is kept in the Institute of Entomology, Guizhou University, Guiyang, P. R. China (GUGC).

Key words New species, new record genus, Torrenticolidae, key, China.

Torrenticolid mites have successfully colonized fresh water habitat including fast flowing streams and springs, and are the dominant group. The Torrenticolidae are divided into two subfamilies, Testudacarinae and Torrenticolinae (Di Sabatino *et al.*, 2010). Of which, the former has only one genus, i.e. *Testudacarus*, and the latter subfamily includes four genera: *Monatractides*, *Neoatractides*, *Pseudotorrenticola* and *Torrenticola*. The genus *Neoatractides* is divided into three subgenera, *Neoatractides*, *Allotorrenticola* and *Heteratractides* (Di Sabatino *et al.*, 2010). At present, two species of the subgenus *Heteratractides* were reported: *N. (H.) serratirostris* (Lundblad, 1941) and *N. (H.) orientalis* (Wiles, 1991). In this paper, the third species is reported from Guangdong Provinces, China, namely *N. (H.) proclusterosetus* **sp. nov.**, with the diagnosis of the subgenus *Heteratractides*.

Water mites were collected in water by the special hand netting that was made with iron rod and the nylon mesh with 200 µm mesh size. All specimens were preserved in Koenike's fluid, cleaned by Lundblad fluid and mounted in gelatin mounting fluid. The holotype is deposited in Institute of Entomology, Guizhou University, Guiyang, P. R. China (GUGC).

All measurements are given in micrometer (µm). The following abbreviations and terms are used:

Cx-1, 4—Coxae 1, 4;

Ap—anal pore;

A2—postantennal glandularia;

O1—preocularia;

L1–L4—lateroglandularia 1–4;

V1–V4—ventroglandularia 1–4;

D1–D4—dorsoglandularia 1–4;

I-L-1–6, *etc.*—first leg's segment 1–6, *etc.*;

P-1–5—palp 1–5;

L—length;

W—width;

urn:lsid:zoobank.org:pub:3BCCD646-FC4D-4685-912F-E28D4787DA70

Received 21 April 2017, accepted 21 June 2018

Executive editor: Fuqiang Chen

H—height;

ML—medial length;

E2, 4—epimeroglandularia 2, 4;

0+1—1 plate, all four anterior platelets fused to the large dorsal plate;

2+1—3 plates, 2 anterior platelets and a single large dorsal plate, the posterior platelets fused to the large dorsal plate;

4+1—4 plates, 4 anterior platelets and a single large dorsal plate.

Family Torrenticolidae Piersig, 1902

Diagnosis. See Wiles (1997: 197).

Genus *Neoatractides* Lundblad, 1941

Neoatractides Lundblad, 1941: 97–121.

Diagnosis. See Wiles (1997: 203–204).

Type species. *Neoatractides inachus* Lundblad, 1941.

Habitat. Rivers, streams.

Distribution. Palaearctic, Nearctic, Neotropical and Oriental Regions.

Remarks. The genus is recorded in China for the first time.

Subgenus *Heteratractides* Lundblad, 1941

Heteratractides Lundblad, 1941: 97–121.

Diagnosis. See characters of the genus *Neoatractides*, and characteristic by: dorsal plates variable, 0+1, 2+1, 4+1; infracapitulum small, with characteristic broad, upturned rostrum, oral papillae inconspicuous. Palp 5-segmented, P-2 long, with one ventral seta; Distal margin of P-3 deeply indented.

Type species. *Neoatractides (Heteratractides) serratirostris* (Lundblad, 1941).

Habitat. Rivers.

Distribution. Neotropical and Oriental Regions.

Remarks. The subgenus is recorded in China for the first time.

Neoatractides (Heteratractides) procluserosetus sp. nov. (Figs 1–11)

Material examined. Holotype. Male, Dinghu Mountain National Reserve, Zhaoqing, Guangdong, China (23°10.237'N, 112°31.248'E; elev. 1000 m), coll. Jianjun Guo, 30.XI.2002.

Diagnosis. The species is different from other by: dorsal plates 4+1; seven fine long setae at tip of Cx-1; P-4 short, L/W ratio 1.7.

Description. Male. Idiosoma elliptical, L 760, W 570. Dorsal plate L 650, W 500 (Fig. 1); the first pair of small dorsal platelets nearly circular, L 148, W 66; second pair of small dorsal platelets slightly triangular, L 244, W 92 (Fig. 1). Infracapitulum bay U-shaped, L 138, W 96 (Fig. 2). Cx-1 ML 146, median suture line L 79; Cx-1 with seven anterior thin long setae, posterior margin of Cx-4 obvious, and on the same line with the fifth pair of acetabula. Genital field nearly circular, L 150, W 124. Infracapitulum (Fig. 4), ventral L 269 and dorsal L 197, H 126, infracapitular rostrum thick and short, L 108, dorsal apodeme short and broad. Chelicera L 345 (Fig. 6), chelicera claw L 75. P-1 with a single short dorsal seta; P-2 with a single long ventral seta and four dorsal setae, of which the anterior two long and the posterior two short; P-3 with four dorsal setae, of which the distal long, distal margin of P-3 deeply indented (Fig. 7); P-4 short, L/W ratio 1.7, with two ventral setae. Lengths of palp and leg segments: P-1, 36.8; P-2, 77.0; P-3, 50.0; P-4, 48.0; P-5, 19.2; I-L-3–6: I-L-3, 85.0; I-L-4, 92.5; I-L-5, 115.0; I-L-6, 125.0; IV-L-3, 130.0; IV-L-4, 142.5; IV-L-5, 167.5; IV-L-6, 145.0.

Female. unknown.

Etymology. Named after the seven long fine setae at the anterior margin of Cx-1. “pro-” is a prefix that means front.

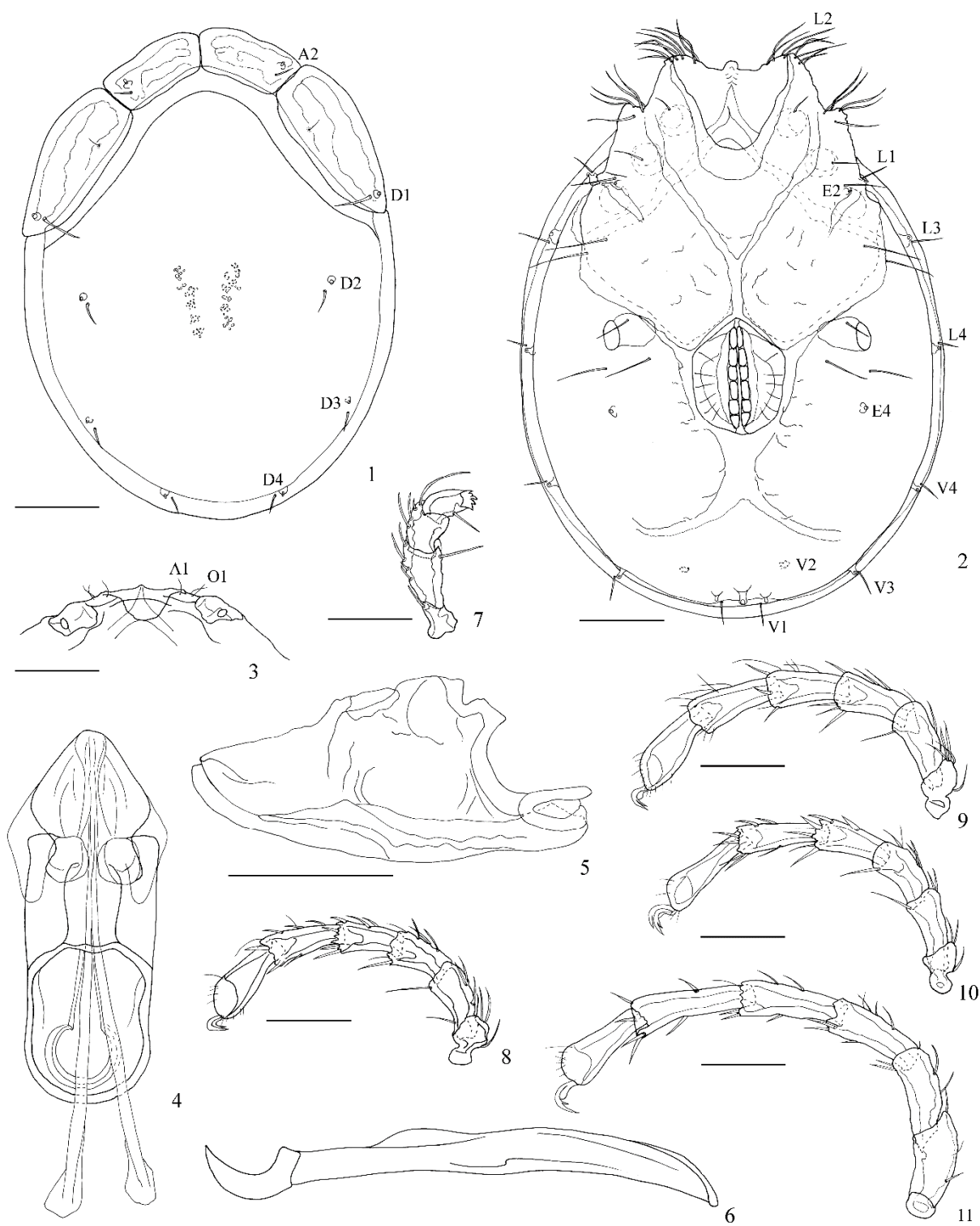
Habitat. Streams.

Distribution. China (Guangdong).

Discussion. The new species, *N. (H.) procluserosetus* sp. nov., belongs to the subgenus *Heteratractides* due to its following features, which are following the diagnosis of subgenus *Heteratractides*: palp 5-segmented, P-2 long, with one ventral seta, distal margin of P-3 deeply indented (Fig. 7); infracapitulum small, and with a broad beak. So the new species

was placed under the subgenus, although the upward bending of infracapitulum is relatively slight (Fig. 5).

Contrasting to the other two known species of the subgenus, *N. (H.) serratirostris* and *N. (H.) orientalis*, the new species is distinguished by the following: 1. Dorsal plates with 4 anterior platelets and a single large dorsal plate (4+1), rather than two anterior platelets and a single large dorsal plate (2+1) in *N. (H.) orientalis*, and platelets fused to the large dorsal plate



Figures 1–11. *Neoatractides (Heteratractides) proclusterosetus*, **sp. nov.**, male. 1. Idiosoma, dorsal view. 2. Idiosoma, ventral view. 3. Frontal margin, dorsal view. 4. Infracapitulum, dorsal view. 5. Infracapitulum, lateral view. 6. Chelicera. 7. Palp. 8. Leg-I. 9. Leg-II. 10. Leg-III. 11. Leg-IV. Scale bars=100 μ m.

(0+1) in *N. (H.) serratirostris*; 2. the upward bending of infracapitulum is relatively slighter than the other two species; 3. with a seta cluster (seven long fine setae) at the front of Cx-1, which is quite different from the other two species.

Key to species of the subgenus *Heteratractides*.

1. Dorsal plates unfused (4+1), with two pairs of small anterodorsal platelets and a single large plate *N. (H.) proclusterosetus* sp. nov.
Dorsal plates different (0+1 or 2+1) 2
2. Dorsal plates with one pair of platelets and a single large plate (2+1) *N. (H.) orientalis* (Wiles, 1991)
Dorsal plates 0+1, dorsal platelets fused to the large dorsal plate *N. (H.) serratirostris* (Lundblad, 1941)

Funding This research was supported by the National Natural Science Foundation of China (31772421, 31372161), National Special Fund on Basic Research of Science and Technology of China (2014FY110100).

Acknowledgments Special thanks due to Tianci Yi (Institute of Entomology, Guizhou University, China) for providing some great suggestions that related to the drawing.

References

- Di Sabatino, A., Gerecke, R., Gledhill, T., Smit, H. 2010. Chelicerata: Acari II. In: Gerecke, R. (ed.), *Süßwasserfauna von Mitteleuropa*, Bd. 7/2-2. Elsevier GmbH, Spektrum Akademischer Verlag, München. 236pp.
- Lundblad, O. 1941. Neue wassermilben. vorläufige mitteilung. *Entomologisk Tidskrift*, 62: 1–2: 97–121.
- Wiles, R. 1991. Pheophilic watermites (Acari: Hydrachnidia) from Mainland Malaysia. *Acarologia*, 32(1): 41–56.
- Wiles, R. 1997. Asian and Oriental Torrenticolidae Piersig, 1902 (Acari: Hydrachnidia: Lebertioidea): a revision of the family and descriptions of new species of *Torrenticola* Piersig and *Pseudotorrenticola* Walter, from Southeast Asia. *Journal of Natural History*, 31: 191–236.